CLAIMS

5

ı,[]

ĻĻ

1:=2

1=6

1. A method for detecting asymmetry in transient signals, the method comprising:

asymmetrically filtering (1-8) an input signal to detect pre-shoots and aftershoots of transient input signals; and

comparing (9-11) amounts of pre-shoots and after-shoots to furnish an output signal indicating whether pre-shoots or after-shoots pre-dominate.

2. A method according to claim 1, wherein the asymmetrically filtering (1-8) comprises:

filtering (1) the input signals utilizing a first set of filter coefficients resulting in an impulse response arranged to provide a first output representing only the pre-shoots present in the input transient signals; and

filtering (2) the input signals utilizing a second set of filter coefficients resulting in an impulse response arranged to provide a second output representing only the after-shoots present in the input transient signals.

- 3. A method according to claim 2, wherein said first set of filter coefficients are anti-symmetrical to said second set of filter coefficients.
- 4. A method according to claim 2, wherein the asymmetrically filtering further comprises calculating (3, 4) absolute values of the first and second outputs to give first and second absolute values respectively.
- 5. A method according to claim 4, wherein the asymmetrically filtering further comprises:

summing (5) the first absolute values over a pre-determined time interval to obtain first summed values; and

summing (6) the second absolute values over the pre-determined time interval to obtain second summed values.

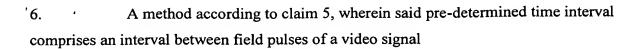
l.J

|sak |sak

20

30





- 5 7. A method according to claim 1, wherein the output signal of the comparing step (9-11) is averaged (13) over a plurality of field periods to reduce field-to-field variation effects.
- 8. A method according to any of the preceding claims, wherein the output signal provides a value measure of the relative amounts of pre-shoots and after-shoots present.
 - 9. An apparatus for detecting asymmetry in transient signals of an input signal, the apparatus comprising:

a pre-shoot filter (1) for receiving an input signal and asymmetrically filtering it utilizing a first set of filter coefficients to provide a first output in which substantially only pre-shoots of input transient signals are present;

an after-shoot filter (2) for receiving the input signal and asymmetrically filtering it utilizing a second set of filter coefficients to provide a second output in which substantially only after-shoots of input transient signals are present; and

summing and comparison means (3 to 11) for summing the first outputs over a predetermined time interval, summing the second outputs over the predetermined time interval and comparing first and second summed outputs to give an output signal indicating whether pre-shoots or after-shoots predominate over the predetermined time interval.

- 25 10. A peaking filter (14-19; 23-26), comprising:

 means for receiving a detection signal indicating whether pre-shoots or aftershoots are found to systematically predominate in transients of an input signal; and

 means for varying filter coefficients of the peaking filter in accordance with
 - the detection signal to provide a corrected output in which transients are substantially symmetrical.
 - 11. A peaking circuit according to claim 11, wherein said peaking filter (14, 15, 17) for performing peaking correction on the input signal comprises an FIR filter comprising:

25

5

10

a delay line (14) for receiving the input signal and having a plurality of outputs $(14_0...14_4)$;

a plurality of multipliers $(15_0...15_4)$ each having a first input terminal connected to a respective individual output $(14_0...14_4)$ of the delay line (14) representing a multiplicand and each having a second input terminal for receiving a respective filter coefficient representing a multiplier and each having an output terminal for outputting a respective product; and

a summing circuit (17) for receiving the respective products from the multipliers (150...154), summing them and providing a summed output, wherein said filter coefficients are variable such that if neither pre-shoots nor after-shoots are found to predominate in transients of the input signal then said coefficients are determined purely based upon a desired amount of peaking required and an impulse response of the filter will be symmetrical, whereas if pre-shoots are found to predominate then said coefficients are varied so as to provide an asymmetrical impulse response in which additional after-shoots are produced, and if after-shoots are found to predominate then said coefficients are varied so as to provide an asymmetrical impulse response in which additional pre-shoots are produced.

12. A method of correcting systematic transient asymmetry distortion in an input signal, the method comprising:

determining whether pre-shoots or after-shoots predominate in transients of the input signal; and

correcting the input signal to render it substantially symmetrical.

- 13. A method according to claim 12, wherein rendering the input signal substantially symmetrical comprises if pre-shoots are found to predominate then adding aftershoots and if after-shoots are found to predominate then adding pre-shoots.
- 14. A method according to claim 13, wherein said method is implemented in a peaking filter by selectively varying filter coefficients of the peaking filter so as to cause the production of after-shoots in the case where pre-shoots predominate, to cause the production of pre-shoots where after-shoots predominate and to give a symmetrical peaking correction in the case where neither pre-shoots nor after-shoots predominate.

5

10

rek

L.

:=k





- 15. A method according to claim 12, wherein, if pre-shoots are found to predominate then high frequency components of the input signal are shifted in time in a first direction with respect to low frequency components of the input signal, and if after-shoots are found to predominate then high frequency components of the input signal are shifted in a second direction in time with respect to the low frequency components, said second direction being opposite to said first direction.
- 16. An method according to claim 14, wherein an output from the peaking filter is fed back to the input of the determining step.
- 17. A display apparatus, comprising:

 means (D, C, F) for carrying out the method of claim 12 to obtain a corrected signal; and

 means (DP) for displaying the corrected signal.